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JFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First named inventor: Karri Ranta-aho

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Group Art Unit: 2617

Examiner: Torres, Marcos L.

PETITION TO WITHDRAW RESTRICTION REQUIREMENT

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

A restriction requirement has been issued in the above case in respect to two dependent claims. Applicant traversed the restriction, but the restriction was made final. Applicant respectfully submits that the restriction requirement is error, and hereby petitions the Commissioner, per 37 CFR 1.144, to review the requirement.

*****If any fee and/or extension is required in addition to any enclosed herewith, please charge Account No. 23-0442.**

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In the Claims: The claims are as follows.

1. (Previously presented) A method for use by a user equipment device and Node Bs of a wireless telecommunication system, the method for enabling Node B based control during soft handover of the maximum data rate allowed for uplink by the user equipment device as indicated by a pointer in the user equipment device, the soft handover resulting in a change of a controlling Node B from a first one of the Node Bs to a second one of the Node Bs, each of the Node Bs for providing commands for control of user equipment devices in at least one respective cell so that the user equipment device in soft handover is simultaneously in at least two cells each possibly controlled by a different one of the Node Bs, the method comprising:

the user equipment device signaling in uplink information indicating one of the cells as a scheduling cell;

each Node B receiving the uplink indicating one of the cells as the scheduling cell and able to provide scheduling commands, determining whether it is in control of the scheduling cell, and issuing scheduling commands for controlling the pointer in the user equipment device if it is in control, but issuing no such commands if it determines it is not in control of the scheduling cell.

2. (Previously presented) The method of claim 1, further comprising:

the user equipment device and also the Node B in control of the scheduling cell each synchronizing a respective pointer for indicating the maximum allowed uplink data rate for the user equipment device to a value according to a synchronization procedure.

3. (Previously presented) The method of claim 2, wherein according to the synchronization procedure, the Node B sets the pointer it maintains to the data rate used in the uplink of the information indicating the scheduling cell.
4. (Previously presented) The method of claim 2, wherein according to the synchronization procedure, the Node B sets the pointer it maintains to a predetermined value.
5. (Previously presented) The method of claim 2, wherein according to the synchronization procedure, both the Node B and the user equipment device set their respective pointers according to predetermined criteria.
6. (Previously presented) The method of claim 2, wherein according to the synchronization procedure, the Node B sets the pointer it maintains to a value it selects and explicitly signals the value to the user equipment device.
7. (Previously presented) The method of claim 2, wherein according to the synchronization procedure, the Node B sets the pointer it maintains to the data rate used in the uplink of the information indicating the scheduling cell or to a predetermined value, whichever is greater.
8. (Original) The method of claim 1, wherein the Node B based control is provided using differential signaling.
9. (Original) The method of claim 1, wherein the Node B based control is provided using explicit signaling.
10. (Previously presented) A user equipment device, comprising:
means for wirelessly communicating with Node Bs of a radio access network in a wireless communication system;

a pointer for indicating a maximum allowed rate of uplink to the wireless communication system;

means for adjusting the pointer responsive to scheduling commands received from a Node B controlling a cell in which the user equipment device is located; and

means for uplinking information indicating as a scheduling cell a particular cell from among a plurality of cells involved in a soft handover, each cell possibly controlled by a different Node B.

11. (Previously presented) A user equipment device as in claim 10, wherein the user equipment device comprises:

means for selecting as a scheduling cell a particular cell from among a plurality of cells involved in a soft handover.

12. (Previously presented) A user equipment device as in claim 10, wherein the user equipment device comprises:

means for determining whether scheduling commands are sent by the Node B controlling the scheduling cell and for disregarding all scheduling commands sent by other than the Node B controlling the scheduling cell.

13. (Previously presented) A user equipment device as in claim 10, wherein the user equipment device further comprises:

means for synchronizing the pointer to a corresponding pointer in the Node B controlling the scheduling cell.

14. (Previously presented) A user equipment device as in claim 13, wherein for synchronization, the user equipment device sets the pointer it maintains to the data rate used in the uplink of the information indicating the scheduling cell.

15. (Previously presented) A user equipment device as in claim

13, wherein for synchronization, the user equipment device sets the pointer it maintains to a predetermined value.

16. (Previously presented) A user equipment device as in claim 13, wherein for synchronization, the user equipment device sets the pointer it maintains according to predetermined criteria.

17. (Previously presented) A user equipment device as in claim 13, wherein for synchronization, the user equipment device sets the pointer it maintains to a value explicitly signalled by the Node B.

18. (Previously presented) A user equipment device as in claim 13, wherein for synchronization, the user equipment device sets the pointer it maintains to the data rate used in the uplink of the information indicating the scheduling cell or to a predetermined value, whichever is greater.

19. (Previously presented) A Node B comprising:

means for wirelessly communicating with a user equipment device as an element of a radio access network of a wireless communication system; and

means for determining when to assume control of scheduling of the user equipment device and when to cease control of scheduling of the user equipment device based on information uplinked by the user equipment device indicating as a scheduling cell a particular cell from among a plurality of cells involved in a soft handover.

20. (Previously presented) The Node B of claim 19, further comprising:

a pointer it maintains indicating a maximum allowed rate of uplink by the user equipment device; and

means by which the Node B synchronizes to the pointer in the user equipment device the pointer it maintains for indicating the maximum allowed uplink data rate for the user equipment device.

21. (Previously presented) The Node B of claim 20, wherein for synchronization, the Node B sets the pointer it maintains to the data rate used in the uplink of the information indicating the scheduling cell.

22. (Previously presented) The Node B of claim 20, wherein for synchronization, the Node B sets the pointer it maintains to a predetermined value.

23. (Previously presented) The Node B of claim 20, wherein for synchronization, the Node B sets its pointer according to predetermined criteria.

24. (Previously presented) The Node B of claim 20, wherein for synchronization, the Node B sets the pointer it maintains to a value it selects and explicitly signals the value to the user equipment device.

25. (Previously presented) The Node B of claim 20, wherein for synchronization, the Node B sets the pointer it maintains to the data rate used in the uplink of the information indicating the scheduling cell or to a predetermined value, whichever is greater.

26. (Previously presented) A system, comprising a plurality of user equipment devices and a plurality of Node Bs, wherein the user equipment device is as recited in claim 10.

27. (Previously presented) A system, comprising a plurality of user equipment devices and a plurality of Node Bs, wherein at least two of the Node Bs are as recited in claim 19.

28. (Previously presented) A computer program product comprising: a computer readable storage structure embodying computer program code thereon for execution by a computer processor in a user equipment device, wherein said computer program code includes instructions for executing the steps recited in claim 1 as executed by a user equipment device.

29. (Previously presented) A computer program product comprising: a computer readable storage structure embodying computer program code thereon for execution by a computer processor in a Node B, wherein said computer program code includes instructions for executing the steps recited in claim 1 as executed by a Node B.

30. (Previously presented) An apparatus for use by a user equipment device, comprising:

 a pointer for indicating a maximum allowed rate of uplink to a Node B of a wireless communication system controlling a cell in which the user equipment device is located;

 means for adjusting the pointer in response to scheduling commands received from the Node B; and

 means for uplinking information indicating as a scheduling cell either the cell controlled by the Node B or a cell controlled by another Node B to which the user equipment is being handed over in soft handover.

31. (Previously presented) An apparatus for use by a Node B of a wireless communication system, comprising:

 a pointer for indicating a maximum allowed rate of uplink to the Node B by a user equipment device located in a cell controlled by the Node B;

means for providing scheduling commands to the user equipment device for adjusting a corresponding pointer in the user equipment device; and

means for determining whether to provide the scheduling commands based on information uplinked by the user equipment device indicating as a scheduling cell either the cell controlled by the Node B or a cell controlled by another Node B to which or from which the user equipment is being handed over in soft handover.

32. (Previously presented) An apparatus for use by a user equipment device, comprising:

a pointer for indicating a maximum allowed rate of uplink to a Node B of a wireless communication system controlling a cell in which the user equipment device is located; and

a processor, configured to:

adjust the pointer in response to scheduling commands received from the Node B; and

uplink information indicating as a scheduling cell either the cell controlled by the Node B or a cell controlled by another Node B to which the user equipment is being handed over in soft handover.

33. (Previously presented) A user equipment device as in claim 32, wherein the processor is further configured to:

select as a scheduling cell a particular cell from among a plurality of cells involved in a soft handover.

34. (Previously presented) A user equipment device as in claim 32, wherein the processor is further configured to:

determine whether scheduling commands are sent by the Node B controlling the scheduling cell and to disregard all scheduling

commands sent by other than the Node B controlling the scheduling cell.

35. (Previously presented) An apparatus for use by a Node B of a wireless communication system, comprising:

a pointer for indicating a maximum allowed rate of uplink to the Node B by a user equipment device located in a cell controlled by the Node B;

a processor, configured to:

provide scheduling commands to the user equipment device for adjusting a corresponding pointer in the user equipment device; and

determine whether to provide the scheduling commands based on information uplinked by the user equipment device indicating as a scheduling cell either the cell controlled by the Node B or a cell controlled by another Node B to which or from which the user equipment is being handed over in soft handover.

36. (Previously presented) An apparatus as in claim 35, wherein the processor is further configured to:

synchronize to the corresponding pointer in the user equipment device the pointer in the Node B.

37. (Previously presented) An apparatus as in claim 36, wherein the processor is further configured so that for synchronization, the pointer in the Node B is set to the data rate used in the uplink of the information indicating the scheduling cell.

38. (Previously presented) A method for use by a user equipment in soft handover from a cell controlled by a Node B to another cell controlled by another Node B, comprising:

signaling in uplink information indicating one of the cells as a scheduling cell and so indicating one of the Node Bs as the scheduling Node B; and

receiving from the scheduling Node B scheduling commands for controlling a pointer in the user equipment device indicating a maximum allowed data rate for uplink.

39. (Previously presented) The method of claim 38, further comprising:

synchronizing the pointer to a corresponding Node B pointer maintained by the scheduling Node B, according to a synchronization procedure, and in synchronizing the pointer, the pointer is either set to the data rate used in the uplink of the information indicating the scheduling cell, or is set according to predetermined criteria, or is set to a value signaled by the scheduling Node B.

40. (Previously presented) A method for use by a Node B in communication with a user equipment device in soft handover to the Node B or from the Node B to another Node B, comprising:

receiving in uplink from the user equipment information indicating a cell as a scheduling cell;

determining whether the cell indicated as the scheduling cell is a cell controlled by the Node B; and

issuing scheduling commands for controlling a pointer in the user equipment device indicating a maximum allowed data rate for uplink but only if the cell indicated as the scheduling cell is a cell controlled by the Node B.

41. (Previously presented) The method of claim 40, further comprising:

synchronizing a pointer in the Node B to the pointer in the user equipment device, according to a synchronization procedure, and in synchronizing the pointers, the Node B pointer is either set to the data rate used in the uplink of the information indicating the scheduling cell, or is set according to predetermined criteria, or is set to a value selected by the Node B and the Node B signals the selected value to the user equipment device.

42. (Previously presented) A system, comprising a plurality of user equipment terminals and a plurality of Node Bs, wherein each user equipment device is as recited in claim 32, and each of the Node Bs includes an apparatus comprising:

a pointer for indicating a maximum allowed rate of uplink to the Node B by a user equipment device located in a cell controlled by the Node B;

a processor, configured to:

provide scheduling commands to the user equipment device located in a cell controlled by the Node B, for adjusting a corresponding pointer in the user equipment device; and

determine whether to provide the scheduling commands based on information uplinked by the user equipment device indicating as a scheduling cell either the cell controlled by the Node B or a cell controlled by another Node B to which or from which the user equipment is being handed over in soft handover.

43. (Previously presented) A system as in claim 42, wherein the processor is further configured to:

synchronize a pointer in the Node B to the pointer in the user equipment device, according to a synchronization procedure, and in synchronizing the pointers, the Node B pointer is either set to the data rate used in the uplink of the information

indicating the scheduling cell, or is set according to predetermined criteria, or is set to a value selected by the Node B and the Node B signals the selected value to the user equipment device.

REMARKS

The Examiner issued a restriction requirement asserting that the claims are to multiple inventions, forcing applicant to decide between:

- I. claims 1-9 and 28-29 (Group I) to a method or computer program product;
- II. claims 10-18, 26, 30, and 32-34 to a UE (Group II); or
- III. claims 19-25, 27, 31, and 35-43 to a Node B (Group III).

The authority for the Office to issue a restriction requirement derives from 35 USC §121, which provides that:

If two or more independent and distinct inventions are claimed in one application, the Director may require the application to be restricted to one of the inventions.
[Emphasis added.]

Applicant's attorney understands that despite the recitation by 35 USC §121 of "independent and distinct," the Office considers restriction proper where inventions can be asserted as either independent or distinct, where these two terms have a particular meaning asserted by the Office. (See MPEP § 803.)

The MPEP at § 802.01 defines "independent" as follows:

The term "independent" (i.e., unrelated) means that there is no disclosed relationship between the two or more inventions claimed, that is, they are unconnected in design, operation, and effect. For example, a process and an apparatus incapable of being used in practicing the process are independent inventions.

At that same section, the MPEP provides a definition for "distinct" as follows:

Related inventions are distinct if the inventions as claimed are not connected in at least one of design, operation, or effect (e.g., can be made by, or used in, a materially different process) and wherein at least one invention is PATENTABLE (novel and nonobvious) OVER THE

OTHER (though they may each be unpatentable over the prior art).

The invention solves a problem encountered during a soft handover. In a soft handover, a user equipment (UE) is handed over from a first Node B to another Node B, and during this, is in contact with both, i.e. both receive all communications from the user equipment, and in the prior art, both issue so-called scheduling commands, which, among other things, regulate the maximum allowed power the UE is allowed to use in uplink. The power regulation is done by sending commands that set the value of a pointer so as to indicate one or another maximum allowed power rate. So in the prior art, a UE could receive scheduling commands from each of the two Node Bs involved in a handover, and the commands could be inconsistent.

The invention solves this problem by having a UE transmit to both Node Bs information indicating which is to be the controlling Node B, and so which is to provide scheduling commands. The information is recited as information indicating which of the two cells involved in the handover is to be the scheduling cell. The Node Bs know which of them controls which cell, and so can tell from the information which of them is to be the controlling Node B.

All Group II claims (to a UE) recite a UE signaling in uplink information indicating a particular cell as a scheduling cell, and all Group III claims (to a Node B) recite a Node B receiving the uplink and determining whether it is in control of the scheduling cell, and issuing scheduling commands for controlling the pointer in the UE if it is in control, but issuing no such commands if it determines it is not in control of the scheduling cell.

Thus, a UE according to the (Group II) claims is of no utility without a Node B according to the (Group III) claims, and *vice versa*.

Therefore, a UE according to the claims cannot be said to be term "independent" (i.e., unrelated) of a Node B according to the claims, because there is in fact a disclosed relationship between the two, that is, they are connected in design, operation, and effect. A Node B would only receive information indicating a scheduling cell and act on it if there were a UE configured to provide such information. Conversely, a UE would only provide such information if the Node Bs that would receive the information were configured to use the information to determine which of them is to provide scheduling commands.

And a UE according to the claims cannot be said to be term "distinct" from a Node B according to the claims because they are in fact connected in at least one of design, operation, or effect and wherein at least one invention is not patentable (novel and nonobvious) over the other (though they may each be unpatentable over the prior art). The claimed UE is designed and operates to provide information that affects the operation of a claimed Node B in that it causes the Node B to inspect the information and determine from it whether to issue scheduling commands. Conversely, the claimed Node B is designed and operates to use information provided by a UE to determine whether it is to issue scheduling commands to the UE.

Further, the claimed UE suggests the claimed Node B: a UE operating according to the invention and so providing uplink information indicating a scheduling cell suggests a Node B acting on such information. Conversely, the claimed Node B suggests the claimed UE: a Node B examining uplink information indicating a scheduling cell suggests a UE providing such information. Thus, neither is patentable over the other. The claimed UE and claimed Node B stand in the same relation to each other as a specially threaded bolt does to a correspondingly specially threaded nut.

Thus, the invention as in the Group III claims (to a Node B) is neither independent nor distinct from the invention as in the

Group II claims (to a UE), as the terms "independent" and "distinct" are defined by the Office.

Regarding the Group I claims, elected for examination by this paper, these claims recite both a UE signaling in uplink information indicating a particular cell as a scheduling cell, and a Node B receiving the uplink and determining whether it is in control of the scheduling cell, and issuing scheduling commands for controlling the pointer in the UE if it is in control, but issuing no such commands if it determines it is not in control of the scheduling cell. In other words, the Group I claims include the limitations of both the Group II claims and also the Group III claims. It cannot therefore be asserted that the Group I claims are either independent or distinct from the Group II claims or the Group III claims, neither of which are either independent or distinct from each other, for the reasons given above, and so are not properly restrictable.

Further, the MPEP at 806.05(d) provides that:

To support a restriction requirement where applicant separately claims plural subcombinations usable together in a single combination and claims a combination that requires the particulars of at least one of said subcombinations, both two-way distinctness and reasons for insisting on restriction are necessary. Each subcombination is distinct from the combination as claimed if:

(A) the combination does not require the particulars of the subcombination as claimed for patentability (e.g., to show novelty and unobviousness), and

(B) the subcombination can be shown to have utility either by itself or in another materially different combination. See MPEP § 806.05(c). Furthermore, restriction is only proper when there would be a serious burden if restriction were not required, as evidenced by separate classification, status, or field of search.

In the matter at hand, the Group I claims are to a combination that includes the particulars of the subcombination Group II and also the subcombination Group III. Applicant respectfully asserts

that regardless of whether prong (A) of the test passes or fails for restriction, the Group II subcombination has no utility by itself or in another materially different combination, nor does the Group III subcombination. The Office has asserted that "subcombination I has separate utility such as permitting communication between a mobile station and a base station," but Group I is not a subcombination, so this assertion by the Office is nonsensical, in that what is required is that a subcombination have separate utility from its use in a combination, and there is not combination of which Group I is a subcombination. The Office next asserts that "subcombination II has separate utility such as a mobile station for providing communication to a user," but the separate utility required for restriction must be utility for the subcombination including all recited particulars, and all subcombination II claims include:

uplinking information indicating as a scheduling cell a particular cell from among a plurality of cells involved in a soft handover, each cell possibly controlled by a different Node B,

and as argued above, the only utility of such a particular is as in the combination (Group I). The Office next asserts that "subcombination III has separate utility such as a base station for communicating between a radio access network and mobile stations," but again, the separate utility required for restriction must be utility for the subcombination including all recited particulars, and all subcombination III claims include:

determining when to assume control of scheduling of the user equipment device and when to cease control of scheduling of the user equipment device based on information uplinked by the user equipment device indicating as a scheduling cell a particular cell from among a plurality of cells involved in a soft handover,

and as argued above, the only utility of such a particular is as in the combination (Group I).

Further in regard to prong (A) of the test for restriction, the combination requires the particulars of either the subcombination I as claimed for patentability, or the subcombination III as claimed for patentability, and so there can not be a restriction as set out in the Office action, i.e. a restriction to either Group I (a combination, including the specific particulars of Group II and also the specific particulars of Group III), or Group II or Group III. (See MPEP at 806.05(c)(I).)

Further in regard to the restriction requirement generally: applicant respectfully submits that it is the policy of the Office not to require restriction unless one or more of three reasons appear: a separate classification, a separate status in the art, and a different field of search. (See MPEP § 808.02 and also 806.05(d).) Despite the assertion by the Examiner that "the inventions have acquired a separate status in the art in view of their different classification," the classification (not sub-classification) for each is class 370, and applicant respectfully submits that in searching for a method as in Group I the Examiner would search the same art when searching for a UE as in the Group II or a Node B as in Group III, for the reasons given above, i.e. that the Group I claims include the limitations of both Group II and Group III.

Thus, the invention as in the non-elected claims is neither independent nor distinct from the invention as in the elected claims, as those terms are defined by the Office.

For all the foregoing reasons it is believed that the restriction requirement is error, and ought to be withdrawn.

Respectfully submitted,

22 Oct. 2007

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